

US EPA ARCHIVE DOCUMENT



Minnesota Pollution Control Agency

# A Crude Oil In-Situ Burn in a Peat Bog

Enbridge Energy Company  
July 4, 2002  
Cohasset, Minnesota



# Release: Discovery and Notifications

- 3:15 a.m. ▶ Enbridge personnel in Edmonton, Canada notice large pressure drop
- ▶ Immediately act to shut down line
  - ▶ Identify release area between two pumping stations about 50 miles apart
  - ▶ Dispatch crews to locate release
- 7:45 a.m. ▶ Visually confirm release
- ▶ Notify National Response Center, State Duty Officer and local responders



# Release: Site Conditions & Considerations

- ▶ Estimated volume loss: 6,000 barrels  
(252,000 gal)
- ▶ Release area:
  - Peat bog surrounded by spruce forest
  - Bog drains to Blackwater Creek → Blackwater Lake  
(*backwater area of the Mississippi River*)
  - Heavy equipment access to bog very difficult
- ▶ Weather forecast: heavy rain

## Decision: Allow In-situ Burn

- ▶ Site conditions make mechanically removing and/or containing product difficult
- ▶ Heavy rain in forecast increases the possibility of oil reaching Blackwater Creek (*and eventually Mississippi River*)
- ▶ Release location remoteness allows evacuation of citizens and protection of structures
- ▶ Minnesota DNR planes available to drop retardant on perimeter and to “fly cover”

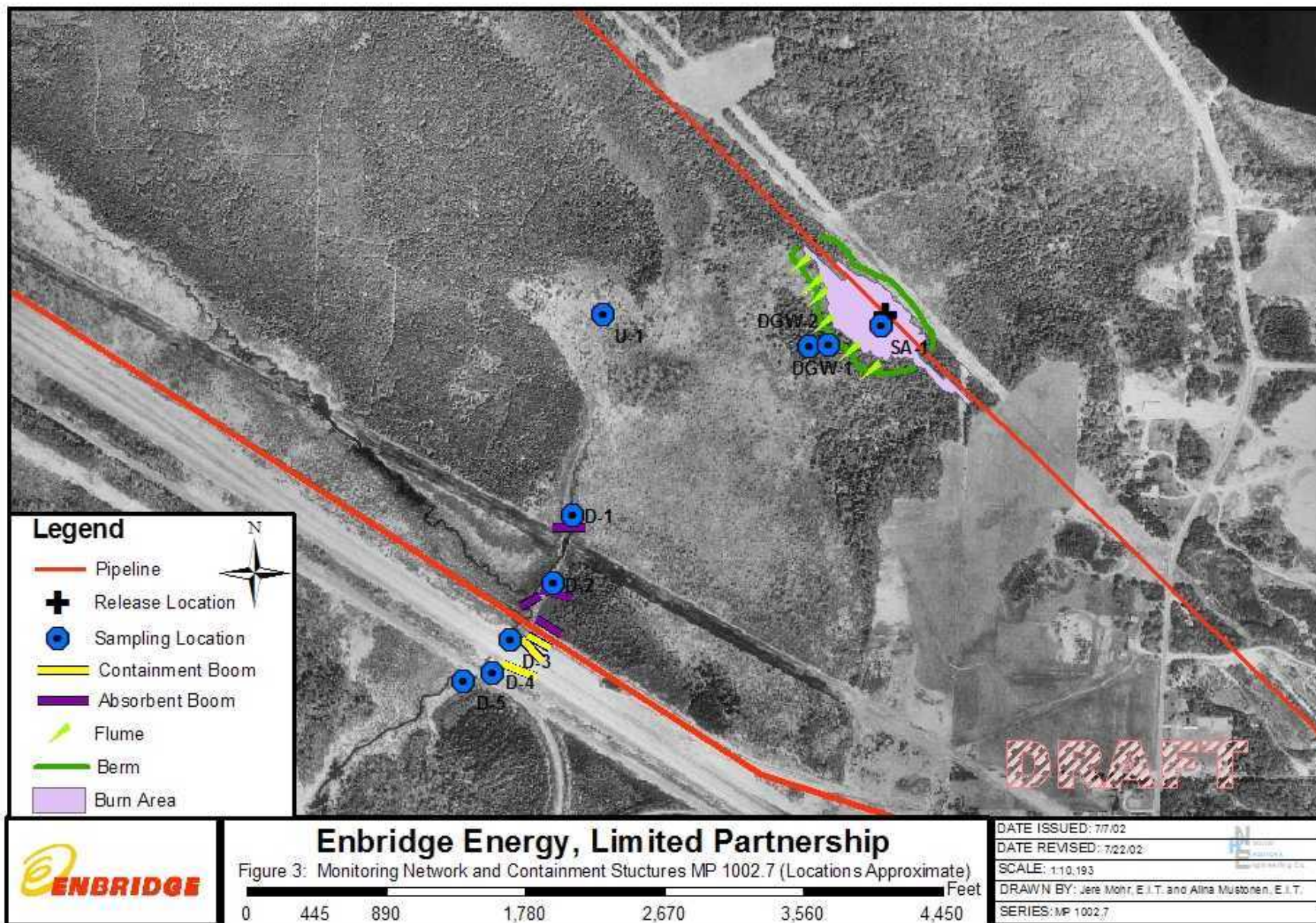
# Approval to Allow In-situ Burn

- ▶ Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, and local Fire Chief
- ▶ Federal On Scene Coordinator, EPA, did not arrive until after the burn was initiated but did concur with the decision after the fact
- ▶ Regional Response Team (RRT) for Region 5 was not notified. By agreement, Region 5 states do not need RRT permission for in-situ burns. (Region 5 Area Plan, Appendix VIII.)



















































Fire truck standing by









































## Results of In-situ Burn

- ▶ Most lighter end (*most toxic*) crude oil components believed consumed by fire
- ▶ Remaining product generally much “thicker” consistency
- ▶ Volume of product removed by burn estimated at 50 %



# Remaining Clean-up

- ▶ **Site access:** Timber mats used (*some areas required stacking six or seven layers deep*)
- ▶ **Containment:** Trench and dike surround entire site
- ▶ **Clean-up strategy:** Recover product; remove peat
- ▶ **Current efforts:** Continue sampling and definition of any remaining contamination











































## **Remaining Fire Extinguished**

As the majority of the burn had ended, various “pockets” of product would extinguish but then reignite as product came to the surface. Also, by this time, physical recovery was more efficient.

















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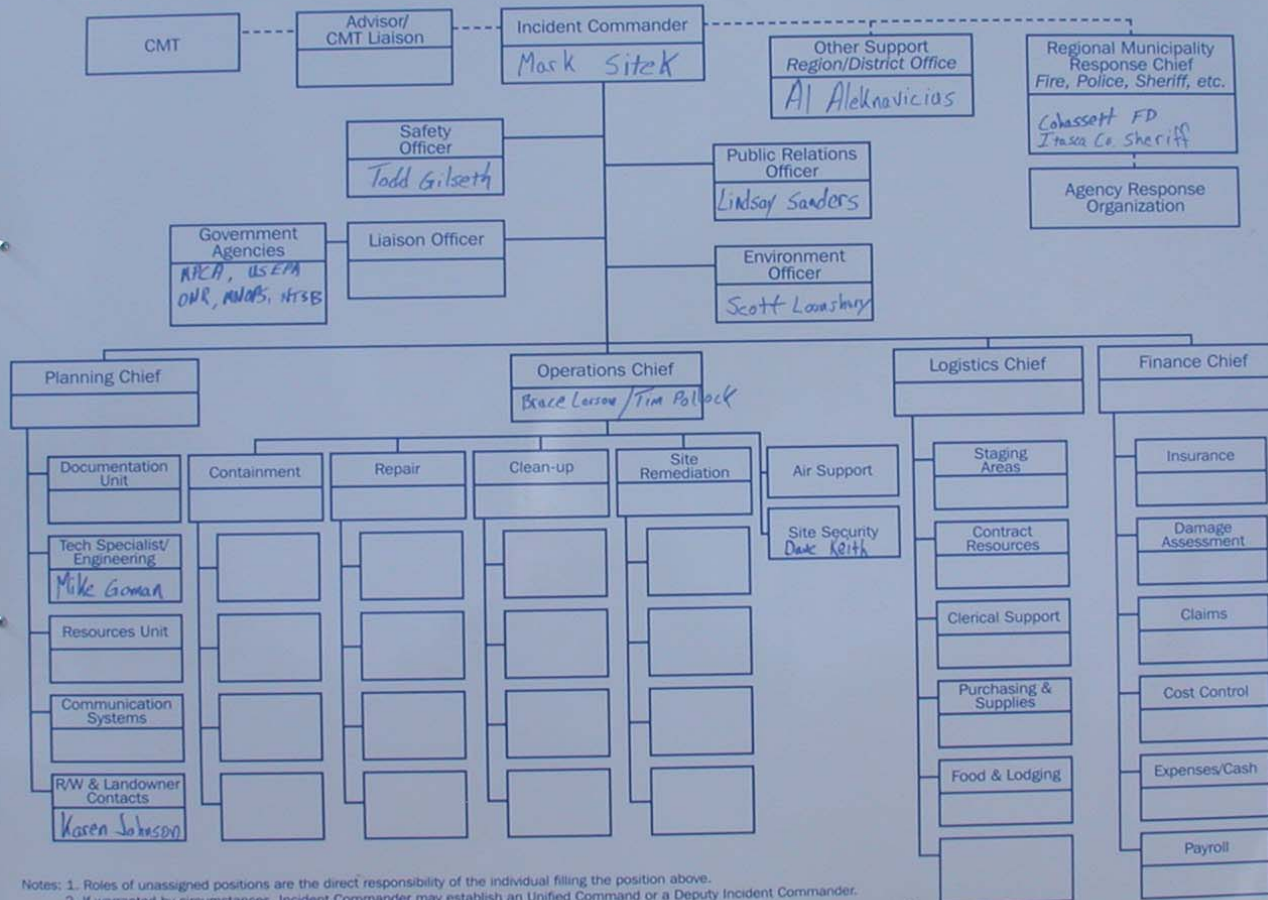






# INCIDENT COMMAND ORGANIZATION CHART

(Guideline only - modify to suit prevailing conditions)



Notes: 1. Roles of unassigned positions are the direct responsibility of the individual filling the position above.  
2. If warranted by circumstances, Incident Commander may establish an Unified Command or a Deputy Incident Commander.  
Revised June, 2001























Large reflective eye and decoy wing-flapping  
birds used to “haze” waterfowl from landing in oil













Placing oiled-peat into windrows and hydrating out oil met with limited success





November 1, 2002: field operations suspended



9.25.2002



Fall 2003





Vegetation was reestablished (natural and introduced) and water flow through the bog was partially restored.













# Prevention

- ▶ Initially, when back in operation, pipeline was operated at a reduced pressure.
- ▶ Company has used additional “smart pig” technology to identify and replace defects.
- ▶ Announced and unannounced drills by the state.
- ▶ Final NTSB Report still pending and decisions by Federal Office of Pipeline Safety.



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